

A. AMENDMENTS TO CLAIMS

Please amend the claims as indicated hereinafter.

1. - 15. (CANCELLED)

16. (PREVIOUSLY PRESENTED) A method for automatically routing an integrated circuit, the method comprising the computer-implemented steps of:

receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined; and

updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

2 ~~17.~~

(ORIGINAL) The method as recited in Claim 16, further comprising performing a design rule check on the updated integrated circuit layout data, wherein the design rule check does not check one or more layout objects previously checked during determination of the routing path.

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~~18.~~

(PREVIOUSLY PRESENTED) A method for automatically routing an integrated circuit, the method comprising the computer-implemented steps of:

receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein

determining the routing path between the first and second integrated circuit devices includes


extending the routing path a specified amount to generate an extended portion of the routing path, and

selectively performing a design rule check on only the extended portion of the routing path; and

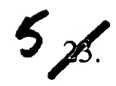
updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

19. (CANCELLED)

20. (CANCELLED)

 21. (PREVIOUSLY PRESENTED) A method for automatically verifying an integrated circuit layout, the method comprising the computer-implemented steps of:
receiving integrated circuit layout data that defines a set of two or more layout objects contained in the integrated circuit layout;
performing a first design rule check on a layout object from the set of two or more layout objects by evaluating the layout object against specified design criteria;
changing one or more values defined by the specified design criteria to generate updated specified design criteria, wherein the changing of the one or more values is performed after a specified amount of time has elapsed and is made with respect to either the layout object or one or more other layout objects from the set of two or more layout objects; and
performing a second design rule check on the layout object by evaluating the layout object against the updated specified design criteria.

22. (CANCELED)

 23. (ORIGINAL) A method for automatically routing an integrated circuit, the method comprising the computer-implemented steps of:
receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;
receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a routing path between first and second integrated circuit devices that satisfies specified design criteria, wherein determining the routing path between the first and second integrated circuit devices includes determining whether the distance to be routed for a portion of the routing path exceeds a specified distance, and if the distance to be routed for the portion of the routing path does not exceed the specified distance, then routing the portion of the routing path in a single step; and updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

24. – 44. (CANCELLED)

~~45.~~

(PREVIOUSLY PRESENTED) A computer-readable medium carrying one or more sequences of one or more instructions for automatically routing an integrated circuit, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:


receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;


receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined;

updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

 (PREVIOUSLY PRESENTED) The computer-readable medium as recited in Claim ~~45~~⁶, further comprising one or more additional instructions which, when executed by the one or more processors, cause the one or more processors to perform a design rule check on the updated integrated circuit layout data, wherein the design rule check does not check one or more layout objects previously checked during determination of the routing path.

 (CURRENTLY AMENDED) A computer-readable medium carrying one or more sequences of one or more instructions for automatically routing an integrated circuit, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or

more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit

connection data and the set of one or more routing indicators, the routing path

between the first and second integrated circuit devices, wherein the routing path

satisfies specified design criteria, The computer-readable medium as recited in

Claim 24, wherein determining the routing path between the first and second integrated circuit devices includes

extending the routing path a specified amount to generate an extended portion of the routing path, and

selectively performing a design rule check on only the extended portion of the routing path; and

updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

48. (CANCELLED)

49. (CANCELLED)

50.

(PREVIOUSLY PRESENTED) A computer-readable medium carrying one or more sequences of one or more instructions for automatically verifying an integrated circuit layout, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving integrated circuit layout data that defines a set of two or more layout objects contained in the integrated circuit layout;

performing a first design rule check on a layout object from the set of two or more layout objects by evaluating the layout object against specified design criteria;
changing one or more values defined by the specified design criteria to generate updated specified design criteria, wherein the changing of the one or more values is performed after a specified amount of time has elapsed and is made with respect to either the layout object or one or more other layout objects from the set of two or more layout objects; and
performing a second design rule check on the layout object by evaluating the layout object against the updated specified design criteria.

51. (CANCELED)

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52.

(PREVIOUSLY PRESENTED) A computer-readable medium carrying one or more sequences of one or more instructions for automatically routing an integrated circuit, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:
receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;
receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;
determining, based upon the integrated circuit layout data and the integrated circuit connection data, a routing path between first and second integrated circuit devices that satisfies specified design criteria, wherein determining the routing path between the first and second integrated circuit devices includes
determining whether the distance to be routed for a portion of the routing path exceeds a specified distance, and
if the distance to be routed for the portion of the routing path does not exceed the specified distance, then routing the portion of the routing path in a single step; and

updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

53. – 62. (CANCELLED)

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63.

(PREVIOUSLY PRESENTED) A system for automatically routing an integrated circuit, the system comprising:

a data storage mechanism having stored therein

integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit, and

integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices; and

a routing mechanism communicatively coupled to the data storage mechanism, the routing mechanism being configured to determine, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices, determine, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined; and

update the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

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64.

(PREVIOUSLY PRESENTED) The system as recited in Claim 63, wherein the routing mechanism is further configured to perform a design rule check on the updated integrated circuit layout data, wherein the design rule check does not check one or more layout objects previously checked during determination of the routing path.

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65.

(PREVIOUSLY PRESENTED) A system for automatically routing an integrated circuit, the system comprising:
a data storage mechanism having stored therein
integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit, and
integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices; and
a routing mechanism communicatively coupled to the data storage mechanism, the routing mechanism being configured to determine, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices, determine, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein determining the routing path between the first and second integrated circuit devices includes

extending the routing path a specified amount to generate an extended portion of the routing path, and

selectively performing a design rule check on only the extended portion of the routing path; and

update the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

66. (CANCELLED)

67. (CANCELLED)